Claims

What is claimed is:

1. An apparatus for coupling a tubular member to a preexisting structure, comprising:

a first support member including a first fluid passage;

a manifold coupled to the support member including:

a second fluid passage coupled to the first fluid passage including a throat passage adapted to receive a plug;

a third fluid passage coupled to the second fluid passage; and

a fourth fluid passage coupled to the second fluid passage;

a second support member coupled to the manifold including a fifth fluid passage coupled to the second fluid passage;

an expansion cone coupled to the second support member;

a tubular member coupled to the first support member including one or more sealing members positioned on an exterior surface;

a first interior chamber defined by the portion of the tubular member above the manifold, the first interior chamber coupled to the fourth fluid passage;

a second interior chamber defined by the portion of the tubular member between the manifold and the expansion cone, the second interior chamber coupled to the third fluid passage;

a third interior chamber defined by the portion of the tubular member below the expansion cone, the third interior chamber coupled to the fifth fluid passage; and

a shoe coupled to the tubular member including:

a throat passage coupled to the third interior chamber adapted to receive a wiper dart; and

a sixth fluid passage coupled to the throat passage.

2. A method of coupling a tubular member to a preexisting structure, comprising:

positioning a support member, an expansion cone, and a tubular member within a preexisting structure;

injecting a first quantity of a fluidic material into the preexisting structure below the expansion cone; and

injecting a second quantity of a fluidic material into the preexisting structure above the expansion cone.

3. An apparatus, comprising:

a preexisting structure; and

an expanded tubular member coupled to the preexisting structure;

wherein the expanded tubular member is coupled to the preexisting structure by a process comprising:

positioning a tubular support member defining an internal longitudinal passage, an expansion cone, and the tubular member within the preexisting structure;

injecting a first fluidic material through the internal passage of the tubular support member into the preexisting structure below the expansion cone; and

injecting a second fluidic material through the internal passage of the tubular support member into the preexisting structure above the expansion cone.

4. An apparatus for coupling two elements, comprising:

a support member including one or more support member slots;

a tubular member including one or more tubular member slots; and

a coupling for removably coupling the tubular member to the support member, including:

a coupling body movably coupled to the support member;

one or more coupling arms extending from the coupling body; and

coupling elements extending from corresponding coupling arms adapted to mate with corresponding support member and tubular member slots.

5. A method of coupling a first member to a second member, comprising:
forming a first set of coupling slots in the first member;
forming a second set of coupling slots in the second member;
aligning the first and second pairs of coupling slots; and
inserting coupling elements into each of the pairs of coupling slots.

6. An apparatus for controlling the flow of fluidic materials within a housing, comprising:
a first passage within the housing;
a throat passage within the housing fluidicly coupled to the first passage adapted to receive a plug;
a second passage within the housing fluidicly coupled to the throat passage;
a third passage within the housing fluidicly coupled to the first passage;
one or more valve chambers within the housing fluidicly coupled to the third passage including moveable valve elements;
a fourth passage within the housing fluidicly coupled to the valve chambers and a region outside of the housing;
a fifth passage within the housing fluidicly coupled to the second passage and controllably coupled to the valve chambers by corresponding valve elements; and
a sixth passage within the housing fluidicly coupled to the second passage and the valve chambers.

7. A method of controlling the flow of fluidic materials within a housing including an inlet passage and an outlet passage, comprising:
injecting fluidic materials into the inlet passage;

blocking the inlet passage; and

opening the outlet passage.

8. An apparatus, comprising:

a first tubular member;

a second tubular member positioned within and coupled to the first tubular member;

a first annular chamber defined by the space between the first and second tubular members;

an annular piston movably coupled to the second tubular member and positioned within the first annular chamber;

an annular sleeve coupled to the annular piston and positioned within the first annular chamber;

a third annular member coupled to the second annular member and positioned within and movably coupled to the annular sleeve;

a second annular chamber defined by the space between the annular piston, the third annular member, the second tubular member, and the annular sleeve;

an inlet passage fluidicly coupled to the first annular chamber; and

an outlet passage fluidicly coupled to the second annular chamber.

9. A method of applying an axial force to a first piston positioned within a first piston chamber, comprising:

applying an axial force to the first piston using a second piston positioned within the first piston chamber.

10. An apparatus for radially expanding a tubular member, comprising:

a support member;

a tubular member coupled to the support member;

a mandrel movably coupled to the support member and positioned within the tubular member;

an annular expansion cone coupled to the mandrel and movably coupled to the tubular member for radially expanding the tubular member; and

a lubrication assembly coupled to the mandrel for supplying a lubricant to the annular expansion cone, including:

a sealing member coupled to the annular member;

a body of lubricant positioned in an annular chamber defined by the space between the sealing member, the annular member, and the tubular member; and

a lubrication supply passage fluidicly coupled to the body of lubricant and the annular expansion cone for supplying a lubricant to the annular expansion cone.

11. A method of operating an apparatus for radially expanding a tubular member including an expansion cone, comprising:

lubricating the interface between the expansion cone and the tubular member;

centrally positioning the expansion cone within the tubular member; and

applying a substantially constant axial force to the tubular member prior to a beginning of a radial expansion process.

12. An apparatus, comprising:

a support member;

a tubular member coupled to the support member;

an annular expansion cone movably coupled to the support member and the tubular member and positioned within the tubular member for radially expanding the tubular member; and

a preload assembly for applying an axial force to the annular expansion cone, including:

a compressed spring coupled to the support member for applying the axial force to the annular expansion cone; and

a spacer coupled to the support member for controlling the amount of spring compression.

13. An apparatus for coupling a tubular member to a preexisting structure, comprising:

a support member;

a manifold coupled to the support member for controlling the flow of fluidic materials within the apparatus;

a radial expansion assembly movably coupled to the support member for radially expanding the tubular member; and

a coupling assembly for removably coupling the tubular member to the support member.

14. An apparatus for coupling a tubular member to a preexisting structure, comprising:

an annular support member including a first passage;

a manifold coupled to the annular support member, including:

a throat passage fluidicly coupled to the first passage adapted to receive a fluid plug;

a second passage fluidicly coupled to the throat passage;

a third passage fluidicly coupled to the first passage;

a fourth passage fluidicly coupled to the third passage;

one or more valve chambers fluidicly coupled to the fourth passage including corresponding movable valve elements;

one or more fifth passages fluidicly coupled to the second passage and controllably coupled to corresponding valve chambers by corresponding movable valve elements;

one or more sixth passages fludicly coupled to a region outside of the manifold and to corresponding valve chambers;

one or more seventh passages fluidicly coupled to corresponding valve chambers and the second passage; and

one or more force multiplier supply passages fluidicly coupled to the fourth passage;

a force multiplier assembly coupled to the annular support member, including:

a force multiplier tubular member coupled to the manifold;

an annular force multiplier piston chamber defined by the space between the annular support member and the force multiplier tubular member and fluidicly coupled to the force multiplier supply passages;

an annular force multiplier piston positioned in the annular force multiplier piston chamber and movably coupled to the annular support member;

a force multiplier sleeve coupled to the annular force multiplier piston;

a force multiplier sleeve sealing member coupled to the annular support member and movably coupled to the force multiplier sleeve for sealing the interface between the force multiplier sleeve and the annular support member;

an annular force multiplier exhaust chamber defined by the space between the annular force multiplier piston, the force multiplier sleeve, and the force multiplier sleeve sealing member; and

a force multiplier exhaust passage fluidicly coupled to the annular force multiplier exhaust chamber and the interior of the annular support member;

an expandable tubular member;

a radial expansion assembly movably coupled to the annular support member, including:

an annular mandrel positioned within the annular force multiplier piston chamber;

an annular expansion cone coupled to the annular mandrel and movably coupled to the expandable tubular member;

a lubrication assembly coupled to the annular mandrel for supplying lubrication to the interface between the annular expansion cone and the expandable tubular member;

a centralizer coupled to the annular mandrel for centering the annular expansion cone within the expandable tubular member; and

a preload assembly movably coupled to the annular support member for applying an axial force to the annular mandrel; and

a coupling assembly coupled to the annular support member and releasably coupled to the expandable tubular member, including:

a tubular coupling member coupled to the expandable tubular member including one or more tubular coupling member slots;

an annular support member coupling interface coupled to the annular support member including one or more annular support member coupling interface slots; and

a coupling device for releasably coupling the tubular coupling member to the annular support member coupling interface, including:

a coupling device body movably coupled to the annular support member;

one or more resilient coupling device arms extending from the coupling device body; and

one or more coupling device coupling elements extending from corresponding coupling device arms adapted to removably mate with corresponding tubular coupling member and annular support member coupling slots.

15. A method of coupling a tubular member to a pre-existing structure, comprising:

positioning an expansion cone and the tubular member within the preexisting structure using a support member;

displacing the expansion cone relative to the tubular member in the axial direction; and

decoupling the support member from the tubular member.

16. An apparatus, comprising:

a preexisting structure; and

a radially expanded tubular member coupled to the preexisting structure by a process comprising:

positioning an expansion cone and the tubular member within the preexisting structure using a support member;

displacing the expansion cone relative to the tubular member in the axial direction; and

decoupling the support member from the tubular member.

17. A method of coupling a tubular member to a preexisting structure, comprising:

coupling the tubular member and an annular expansion cone for engaging the tubular member to a tubular support member defining an internal longitudinal passage;

positioning the tubular member and the annular expansion cone within the preexisting structure using the tubular support member;

injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member;

exhausting fluidic materials out of an annular chamber within the tubular member below the annular expansion cone through the internal passage of the

tubular support member that are displaced by the downward displacement of the annular expansion cone; and

decoupling the tubular support member from the tubular member.

18. The method of claim 17, wherein coupling the tubular member to the tubular support member comprises:

the tubular support member releasably engaging the tubular member at a plurality of circumferentially spaced apart locations.

19. The method of claim 18, wherein the plurality of circumferentially spaced apart locations are positioned below the annular expansion cone.

20. The method of claim 17, wherein injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member comprises:

displacing an annular piston positioned within the annular chamber above the annular expansion cone towards the annular expansion cone.

21. The method of claim 20, wherein displacing an annular piston positioned within the annular chamber above the annular expansion cone towards the annular expansion cone comprises:

exhausting fluidic materials displaced by the displacement of the annular piston into the internal passage of the tubular support member.

22. The method of claim 20, wherein displacing an annular piston positioned within the annular chamber above the annular expansion cone towards the annular expansion cone comprises:

the annular piston applying a longitudinal force to the annular expansion cone.

23. The method of claim 17, wherein injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member comprises:

fludicly sealing off the internal passage of the tubular support member.

24. The method of claim 23, wherein injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member further comprises:

preventing debris from entering the annular chamber above the annular expansion cone.

25. The method of claim 17, wherein exhausting fluidic materials out of an annular chamber within the tubular member below the annular expansion cone through the internal passage of the tubular support member that are displaced by the downward displacement of the annular expansion cone comprises:

exhausting the fluidic materials through the internal passage of the tubular support member into an annulus between the tubular support member and the preexisting structure.

26. The method of claim 25, wherein exhausting the fluidic materials through the internal passage of the tubular support member into an annulus between the tubular support member and the preexisting structure comprises:

exhausting the fluidic materials through a plurality of radial passages defined by the tubular support member into an annulus between the tubular support member and the preexisting structure.

27. The method of claim 26, wherein exhausting the fluidic materials through a plurality of radial passages in the tubular support member into an annulus between the tubular support member and the preexisting structure comprises:

exhausting the fluidic materials through a plurality of flow control valves housed within the tubular support member into an annulus between the tubular support member and the preexisting structure

28. The method of claim 17, wherein decoupling the tubular support member from the tubular member comprises:

pressurizing an annular chamber between the tubular support member and the tubular member.

29. The method of claim 28, wherein decoupling the tubular support member from the tubular member further comprises:

decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount.

30. The method of claim 29, wherein decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount comprises:

displacing a retaining sleeve when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount.

31. The method of claim 30, wherein decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between

the tubular support member and the tubular member exceeds a predetermined amount further comprises:

displacing the tubular support member relative to the tubular member in the axial direction.

32. The method of claim 17, wherein decoupling the tubular support member from the tubular member comprises:

displacing the tubular support member downwardly relative to the tubular member; and

displacing the tubular support member upwardly relative to the tubular support member.

33. The method of claim 32, wherein decoupling the tubular support member from the tubular member further comprises:

displacing a retaining sleeve when the tubular support member is displaced downwardly relative to the tubular member.

34. The method of claim 32, wherein decoupling the tubular support member from the tubular member further comprises:

decoupling the tubular support member from the tubular member at a plurality of circumferentially spaced apart locations when the tubular support member is displaced upwardly relative to the tubular member.

35. The method of claim 32, wherein decoupling the tubular support member from the tubular member further comprises:

displacing the tubular support member downwardly relative to the tubular member;

rotating the tubular support member relative to the tubular member; and

displacing the tubular support member upwardly relative to the tubular support member.

36. The method of claim 17, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

lubricating the interface between the annular expansion cone and the tubular member.

37. The method of claim 17, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

injecting a hardenable fluidic sealing materials through the internal passage of the tubular support member and the tubular member into an annulus between the tubular member and the preexisting structure.

38. The method of claim 17, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member.

39. The method of claim 38, wherein maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member comprises:

applying a longitudinal force to the annular expansion cone to maintain the annular expansion cone in contact with the tubular member.

40. The method of claim 17, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

stopping the radial expansion and plastic deformation of the tubular member by fluidicly coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member.

41. The method of claim 40, wherein stopping the radial expansion and plastic deformation of the tubular member by fluidicly coupling the annular chamber above the annular expansion cone to the tubular support member further comprises:

sensing the change in operating pressure of the injected fluidic material caused by fluidicly coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member.

42. The method of claim 17, wherein the tubular member includes:

one or more spaced apart external sealing members for sealing the interface between the tubular member and the preexisting structure; and

one or more spaced apart engagement rings for engaging the preexisting structure.

43. The method of claim 42, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

preventing damage to the sealing members and the engagement rings during movement of the tubular member within the preexisting structure.

44. The method of claim 17, wherein the preexisting structure comprises a wellbore casing.

45. The method of claim 17, wherein the preexisting structure comprises an underground pipeline.

46. The method of claim 17, wherein the preexisting structure comprises a structural support.

47. A method of coupling a tubular member to a preexisting structure, comprising:

releasably coupling the tubular member to a tubular support member defining an internal longitudinal passage at a plurality of circumferentially spaced apart locations;

coupling an annular expansion cone for engaging the tubular member to the tubular support member;

positioning the tubular member and the annular expansion cone within the preexisting structure using the tubular support member;

fludicly sealing off the internal passage of the tubular support member;

injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member;

displacing an annular piston positioned within the annular chamber above the annular expansion cone towards the annular expansion cone;

exhausting fluidic materials displaced by the displacement of the annular piston into the internal passage of the tubular support member;

the annular piston applying an axial force to the annular expansion cone;

exhausting fluidic materials out of an annular chamber within the tubular member below the annular expansion cone through the tubular support member that are displaced by the downward displacement of the annular expansion cone;

exhausting the fluidic materials displaced by the annular expansion cone through a plurality of flow control valves housed within the tubular support member into an annulus between the tubular support member and the preexisting structure;

stopping the radial expansion and plastic deformation of the tubular member by fluidicly coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member and sensing the change in operating pressure of the injected fluidic material caused by

fluidicly coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member; and

decoupling the tubular support member from the tubular member.

48. The method of claim 47, wherein decoupling the tubular support member from the tubular member comprises:

pressurizing an annular chamber between the tubular support member and the tubular member.

49. The method of claim 48, wherein decoupling the tubular support member from the tubular member further comprises:

decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount.

50. The method of claim 49, wherein decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount comprises:

displacing a retaining sleeve when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount.

51. The method of claim 50, wherein decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount further comprises:

displacing the tubular support member relative to the tubular member in the axial direction.

52. The method of claim 48, wherein decoupling the tubular support member from the tubular member comprises:

displacing the tubular support member downwardly relative to the tubular member; and

displacing the tubular support member upwardly relative to the tubular support member.

53. The method of claim 52, wherein decoupling the tubular support member from the tubular member further comprises:

displacing a retaining sleeve when the tubular support member is displaced downwardly relative to the tubular member.

54. The method of claim 52, wherein decoupling the tubular support member from the tubular member further comprises:

decoupling the tubular support member from the tubular member at a plurality of circumferentially spaced apart locations when the tubular support member is displaced upwardly relative to the tubular member.

55. The method of claim 52, wherein decoupling the tubular support member from the tubular member further comprises:

displacing the tubular support member downwardly relative to the tubular member;

rotating the tubular support member relative to the tubular member; and

displacing the tubular support member upwardly relative to the tubular support member.

56. The method of claim 47, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

lubricating the interface between the annular expansion cone and the tubular member.

57. The method of claim 47, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

injecting a hardenable fluidic sealing materials through the tubular support member and the tubular member into an annulus between the tubular member and the preexisting structure.

58. The method of claim 47, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member.

59. The method of claim 58, wherein maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member comprises:

applying a longitudinal force to the annular expansion cone to maintain the annular expansion cone in contact with the tubular member.

60. The method of claim 47, wherein the tubular member includes:

one or more spaced apart external sealing members for sealing the interface between the tubular member and the preexisting structure; and

one or more spaced apart engagement rings for engaging the preexisting structure.

61. The method of claim 60, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

preventing damage to the sealing members and the engagement rings during movement of the tubular member within the preexisting structure.

62. The method of claim 47, wherein the preexisting structure comprises a wellbore casing.

63. The method of claim 47, wherein the preexisting structure comprises an underground pipeline.

64. The method of claim 47, wherein the preexisting structure comprises a structural support.

65. The method of claim 2, wherein the expansion cone comprises an annular expansion cone; and wherein positioning the support member, the annular expansion cone, and the tubular member within the preexisting structure comprises:

releasably coupling the tubular member to a tubular support member defining an internal longitudinal passage at a plurality of circumferentially spaced apart locations positioned below the expansion cone; and

coupling the annular expansion cone to the tubular support member.

66. The method of claim 2, wherein injecting the first quantity of the fluidic material into the preexisting structure below the expansion cone comprises:

injecting a hardenable fluidic sealing material through the internal passage of the tubular support member and the tubular member into an annulus between the preexisting structure and the tubular member.

67. The method of claim 2, wherein the expansion cone comprises an annular expansion cone; and wherein injecting the second fluidic material through the internal passage of the tubular support member into the preexisting structure above the annular expansion cone comprises:

fludicly sealing off the internal passage of the tubular support member;

injecting the second fluidic material through the internal passage of the tubular support member into an annular chamber above the

annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member;

exhausting fluidic materials out of an annular chamber within the tubular member below the annular expansion cone through the tubular support member that are displaced by the downward displacement of the annular expansion cone;

exhausting the fluidic materials displaced by the annular expansion cone through a plurality of flow control valves housed within the tubular support member into an annulus between the tubular support member and the preexisting structure; and

stopping the radial expansion and plastic deformation of the tubular member by fluidicly coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member and sensing the change in operating pressure of the injected fluidic material caused by fluidicly coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member.

68. The method of claim 2, wherein the expansion cone comprises an annular expansion cone; and wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

lubricating the interface between the annular expansion cone and the tubular member.

69. The method of claim 2, wherein the expansion cone comprises an annular expansion cone; and wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member.

70. The method of claim 69, wherein maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member comprises:

applying a longitudinal force to the annular expansion cone to maintain the annular expansion cone in contact with the tubular member.

71. The method of claim 2, wherein the preexisting structure comprises a wellbore casing.

72. The method of claim 2, wherein the preexisting structure comprises an underground pipeline.

73. The method of claim 2, wherein the preexisting structure comprises a structural support.

74. The method of claim 15, wherein decoupling the support member from the tubular member comprises:

pressurizing an annular chamber defined between the support member and the tubular member.

75. The method of claim 74, wherein decoupling the support member from the tubular member further comprises:

decoupling the support member from the tubular member when the operating pressure within the annular chamber defined between the tubular support member and the tubular member exceeds a predetermined amount.

76. The method of claim 75, wherein decoupling the support member from the tubular member when the operating pressure within the annular chamber defined between the tubular support member and the tubular member exceeds a predetermined amount comprises:

displacing a retaining sleeve when the operating pressure within the annular chamber defined between the support member and the tubular member exceeds a predetermined amount.

77. The method of claim 76, wherein decoupling the support member from the tubular member when the operating pressure within the annular chamber defined between the support member and the tubular member exceeds a predetermined amount further comprises:

displacing the support member relative to the tubular member in the axial direction.

78. The method of claim 15, wherein decoupling the support member from the tubular member comprises:

displacing the support member downwardly relative to the tubular member; and

displacing the support member upwardly relative to the tubular member.

79. The method of claim 78, wherein decoupling the support member from the tubular member further comprises:

displacing a retaining sleeve when the support member is displaced downwardly relative to the tubular member.

80. The method of claim 78, wherein decoupling the support member from the tubular member further comprises:

decoupling the support member from the tubular member at a plurality of circumferentially spaced apart locations when the support member is displaced upwardly relative to the tubular member.

81. The method of claim 15, wherein decoupling the support member from the tubular member further comprises:

displacing the support member downwardly relative to the tubular member;

rotating the support member relative to the tubular member; and

displacing the support member upwardly relative to the tubular support member.

82. The method of claim 5, further comprising:

removing the coupling elements from the pairs of coupling slots by pressurizing an annular chamber defined between the first and second member.

83. The method of claim 82, wherein removing the coupling elements from the pairs of coupling slots by pressurizing an annular chamber defined between the first and second member comprises:

removing the coupling elements from the pairs of coupling slots when the operating pressure within the annular chamber defined between the first and second member exceeds a predetermined amount.

84. The method of claim 83, removing the coupling elements from the pairs of coupling slots when the operating pressure within the annular chamber defined between the first and second member exceeds a predetermined amount comprises:

displacing a retaining sleeve when the operating pressure within the annular chamber defined between the first and second member exceeds a predetermined amount.

85. The method of claim 84, wherein removing the coupling elements from the pairs of coupling slots when the operating pressure within the annular chamber defined between the first and second member exceeds a predetermined amount comprises:

displacing the first member relative to the second member in the axial direction.

86. The method of claim 5, further comprising:

removing the coupling elements from the pairs of coupling slots by displacing the first member downwardly relative to the second member and then displacing the first member upwardly relative to the second member.

87. The method of claim 86, wherein decoupling the first member from the second member further comprises:

displacing a retaining sleeve when the first member is displaced downwardly relative to the second member.

88. The method of claim 5, further comprising decoupling the first member from the second member by decoupling the first member from the second member at a plurality of circumferentially spaced apart locations by displacing the first member upwardly relative to the second member.

89. The method of claim 5, further comprising decoupling the first member from the second member by displacing the first member downwardly relative to the second member, rotating the first member relative to the second member, and displacing the first member upwardly relative to the second member.

90. A method of coupling a first member to a second member, comprising:

forming a first set of coupling slots in the first member;

forming a second set of coupling slots in the second member;

aligning the first and second pairs of coupling slots;

inserting coupling elements into each of the pairs of coupling slots; and

removing the coupling elements from the pairs of coupling slots by:

pressurizing an annular chamber defined between the first and second member;

removing the coupling elements from the pairs of coupling slots when the operating pressure within the annular chamber defined between the first and second member exceeds a predetermined amount;

displacing a retaining sleeve when the operating pressure within the annular chamber defined between the first and second member exceeds a predetermined amount; and

displacing the first member relative to the second member in the axial direction.